Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-52 (Canceled).

53. (Currently Amended) A process for detecting macrolide antibiotic resistance in microorganisms which are treated using macrolide antibiotics, comprising the steps of:

a) preparing a sample containing microorganisms, wherein said microorganisms are usually ~~treated using~~ sensitive to macrolide antibiotics,

b) contacting the sample with a mixture of hybridization probes specific for a region of the peptidyltransferase center from a 23S rRNA, in situ, wherein said hybridization probes are specific for a nucleic acid sequence in microorganisms which is associated with macrolide antibiotic resistance, under conditions which permit the probe to hybridize specifically, and

c) analyzing the sample by determining the appearance of in situ hybridization between said hybridization probes and nucleic acids in said sample

as an indication of macrolide antibiotic resistance, wherein the microorganisms are not cultured prior to contact with said hybridization probe.

54. (Canceled)

55. (Canceled)

56. (Canceled)

57. (Previously presented) The process according to claim 56, wherein said nucleic acid sequence contains a sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2 and SEQ ID NO:3.

58. (Previously presented) The process according to claim 57, further comprising a hybridization probe specific for a wild type nucleic acid sequence.

59. (Previously presented)The process according to claim 58, wherein said wild type nucleic acid sequence includes the sequence according to SEQ ID NO:4.

60. (Previously presented) The process according to claim 56, wherein the nucleic acid sequence encompasses a region corresponding to one or more of the nucleotides 2032, 2057, 2058, 2059, 2503 and 2611 on the E.coli 23S rRNA.

61. (Previously presented) The process according to claim 53, wherein said microorganisms are slowly growing pathogens and/or pathogens which are difficult to culture, or cannot be cultured in vitro.

62. (Previously presented) The process according to claim 61, wherein said microorganisms are selected from the group consisting of Helicobacter, mycobacteria, Porphyromonas gingivalis, Propionibacterium acnes, Borrelia burgdorferi, mycoplasmas, chlamydias, Tropheryma whippelii, bartonellas, legionellas, nocardias and actinomycetes.

63. (Previously presented) The process according to claim 53, wherein said sample is derived from human or animal tissues or body fluids.

64. (Canceled)

65. (Previously presented) The process according to claim 53, wherein the sample is subjected to a procedure for enriching microorganisms.

66. (Previously presented) The process according to claim 53, wherein a presumptive medium is added to the sample prior to step a).

67. (Previously presented) The process according to claim 66, wherein said presumptive medium contains an indicator substance for typing microorganisms.

68. (Previously presented) The process according to claim 53, wherein the sample is fixed.

69. (Previously presented) The process according to claim 68, wherein said sample is permeabilized.

70. (Previously presented) The process according to claim 53, wherein the hybridization probe is selected from the group consisting of nucleic acids and nucleic acid analogues.

71. (Previously presented) The process according to claim 70, wherein said nucleic acid analogues are PNA.

72. (Previously presented) The process according to claim 70, wherein said nucleic acids are DNA.

73. (Previously presented) The process according to claim 53, wherein the hybridization probe includes a hybridization region having a length of 10 to 30 nucleotides.

74. (Previously presented) The process according to claim 73, wherein said hybridization probe has a length of 15 to 20 nucleotides.

75. (Previously presented) The process according to claim 74, wherein said hybridization probe has a length of 17 to 18 nucleotides.

76. (Previously presented) The process according to claim 53, wherein said hybridization probe is specific for mutations selected from deletions, transversions, transitions and modifications of the wild type sequence.

77. (Previously presented) The process according to claim 53, wherein several hybridization probes are used which are specific for different nucleic acid sequences associated with antibiotic resistance.

78. (Previously presented) The process according to claim 53, wherein said hybridization probe is selected from the group consisting of ClaR1 (SEQ ID NO: I), ClaR2 (SEQ ID NO:2) and ClaR3 (SEQ ID NO:3) .

79. (Previously presented) The process according to claim 53, wherein at least one hybridization probe is specific for a nucleic acid sequence from a wild type of the microorganism.

80. (Previously presented) The process according to claim 53, wherein at least one hybridization probe is specific for a species or a genus of said microorganism.

81. (Previously presented) The process according to claim 53, wherein said hybridization probe carries a direct label.

82. (Previously presented) The process according to claim 53, wherein said hybridization probes are labeled, or can be labeled, with dye groups, fluorescence groups and/or enzyme groups.

83. (Previously presented) The process according to claim 53, wherein more than one hybridization probe is used and said probes are labeled or can be labeled differently.

84. (Previously presented) The process according to claim 53, wherein the sample is analyzed in step c) by microscopic methods.

85. (Previously presented) The process according to claim 53, wherein the analysis in step c) comprises quantitatively determining antibiotic resistance.

86. (Currently amended) A reagent kit for determining macrolide antibiotic resistance in microorganisms by in-situ hybridization, comprising:

(a) a medium for preparing ~~the~~ a sample, and

(b) a mixture of hybridization probes specific for a region of the peptidyltransferase center from a 23S rRNA which is associated with macrolide antibiotic resistance.

87. (Previously presented) The reagent kit according to claim 86, further comprising at least one hybridization probe which is specific for a species or genus of microorganisms.

88. (Previously presented) The reagent kit according to claim 86, wherein the medium for preparing the sample is a presumptive medium and/or a medium for enriching microorganisms.

89. (Previously presented) A reagent kit according to claim 88, wherein the presumptive medium comprises a nutrient solution containing a nitrogen source and other essential components.

90. (Previously presented) The reagent kit according to claim 89, wherein said presumptive medium further comprises reducing substances and/or oxygen-repelling additives.

91. (Previously presented) The reagent kit according to claim 86, further comprising indicator substances which are dissolved and/or suspended in the presumptive medium.

92. (Previously presented) An oligonucleotide having a length of 10 to 30 nucleotides, comprising a sequence according to SEQ ID NO:1, 2, 3 or 4 or a part thereof, wherein said part is at least 10 nucleotides in length.

93. (Previously presented) The oligonucleotide according to claim 92, further comprising a labeling group.

94. (Previously presented) A reagent kit for typing microorganisms and/or determining antibiotic resistance in microorganisms, comprising:

(a) a medium for preparing the sample, and

(b) a means for typing microorganisms and/or for detecting antibiotic resistance, wherein said means for detecting antibiotic resistance comprises a mixture of hybridization probes specific for a region of the peptidyltransferase center from a 23S rRNA .

95. (Previously presented) The reagent kit according to claim 94, wherein the medium for preparing the sample is a presumptive medium and/or a medium for enriching microorganisms.

96. (Previously presented) A reagent kit according to claim 95, wherein the presumptive medium comprises a nutrient solution containing a nitrogen source and other essential components.

97. (Previously presented) The reagent kit according to claim 96, wherein said presumptive medium further comprises reducing substances and/or oxygen-repelling additives.

98. (Previously presented) The reagent kit according to claim 94, further comprising indicator substances which are dissolved and/or suspended in the presumptive medium.

99. (Previously presented) The reagent kit according to claim 98, wherein said indicator substances include a urease indicator for detecting Helicobacter species.

100. (Previously presented) The reagent kit according to claim 99, wherein said urease indicator can detect H. pylori and/or H. heilmannii.

101. (Previously presented) The oligonucleotide according to claim 92, wherein said oligonucleotide has a length of 15 to 20 nucleotides.

102. (Previously presented) The oligonucleotide according to claim 92, wherein said oligonucleotide has a length of 17 to 18 nucleotides.

103. (Previously presented) The process according to claim 53, wherein said microorganism is a Helicobacter and said nucleic acid sequence comprises SEQ ID NO.1.